ANISYNTOIDES WATERHOUSE (LEPIDOPTERA: HESPERIIDAE): A SYNONYM OF *TRAPEZITES* HÜBNER, WITH DESCRIPTION OF A NEW SPECIES FROM WESTERN AUSTRALIA

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Abstract

Anisyntoides is proposed as a junior synonym of *Trapezites* and a new species, *Trapezites waterhousei* is described and illustrated.

Introduction

Waterhouse (1932) established the genus *Anisyntoides* with the following descriptive characters: "Antennae shorter than half the length of costa of fore wing; antenna club bent beyond the middle, with apiculus short and blunt. Fore wing with vein 5 almost straight; origin of vein 2 nearer base than end of cell; origin of vein 3 near end of cell. Male without sex brand . . . . In its antennal characters it differs from *Trapezites* and *Anisynta*."

In the description, Waterhouse assigned to *Anisyntoides* a single species *Anisynta argenteoornatus* (Hewitson) from Western Australia. Waterhouse and Lyell (1914) described *Trapezites sciron* from Western Australia but in this description no comparison was made with *A. argenteoornatus*, due probably to the distinctive superficial differences of these taxa.

The comparative description of *Anisyntoides* by Waterhouse (1932), although valid for the character of the origin of vein 2 (=CuA_2) for distinction from *Anisynta* Lower does not distinguish the genus from *Trapezites*, which agrees with all the characters presented. In particular, in all specimens in this group from Western Australia seen by us, the characters attributed to antennal morphology offer no significant differences. Importantly, the antennal length is approximately half the length of the costa in males and slightly less so for females in all these species.

Synonomy

In the absence of any known adult or juvenile structural differences, we propose that *Anisyntoides* be placed as a junior synonym of *Trapezites* and include a new species of *Trapezites* from Western Australia. Further to this, Williams, Williams, and Atkins (1992) record that *T. sciron* from the western coast of Western Australia has been reared from both *Acanthocarpus* (preferred larval food plant of *T. argenteoornatus* comb. n.) and *Lomandra* (larval food plant of all previously known species of *Trapezites*).

Abbreviations

The following abbreviations are used to indicate that the referred specimens are held in the following collections:
AA, Andrew Atkins Collection, Newcastle; AM, Australian Museum, Sydney; CM, Chris Muller Collection, Sydney; GM, Grant Miller Collection, Lismore; HB, Hugh Bolam Collection, Perth; Jd'A, John d'Apice Collection,

Sydney; MP, Michael Powell Collection, Perth; RE, Rod Eastwood Collection, Nambour; RH, Robert Hay Collection, Perth; RM, Russell Mayo Collection, Newcastle; SAM, South Australian Museum, Adelaide; WAM, Western Australian Museum, Perth.

Genus *Trapezites* Hübner 1823

Trapezites Hubner 1923. Type species *T. symmomus* Hübner.

Steropes Boisduval 1832. Type species *T. iacchus* Fabricius.

Patlasingha Watson 1893. Type species *T. phigalia* Hewitson.

Trapezitas Mabille 1904.

Anisyntoides Waterhouse 1932. syn n. Type species *Anisynta argenteoornatus* (Hewitson 1868).

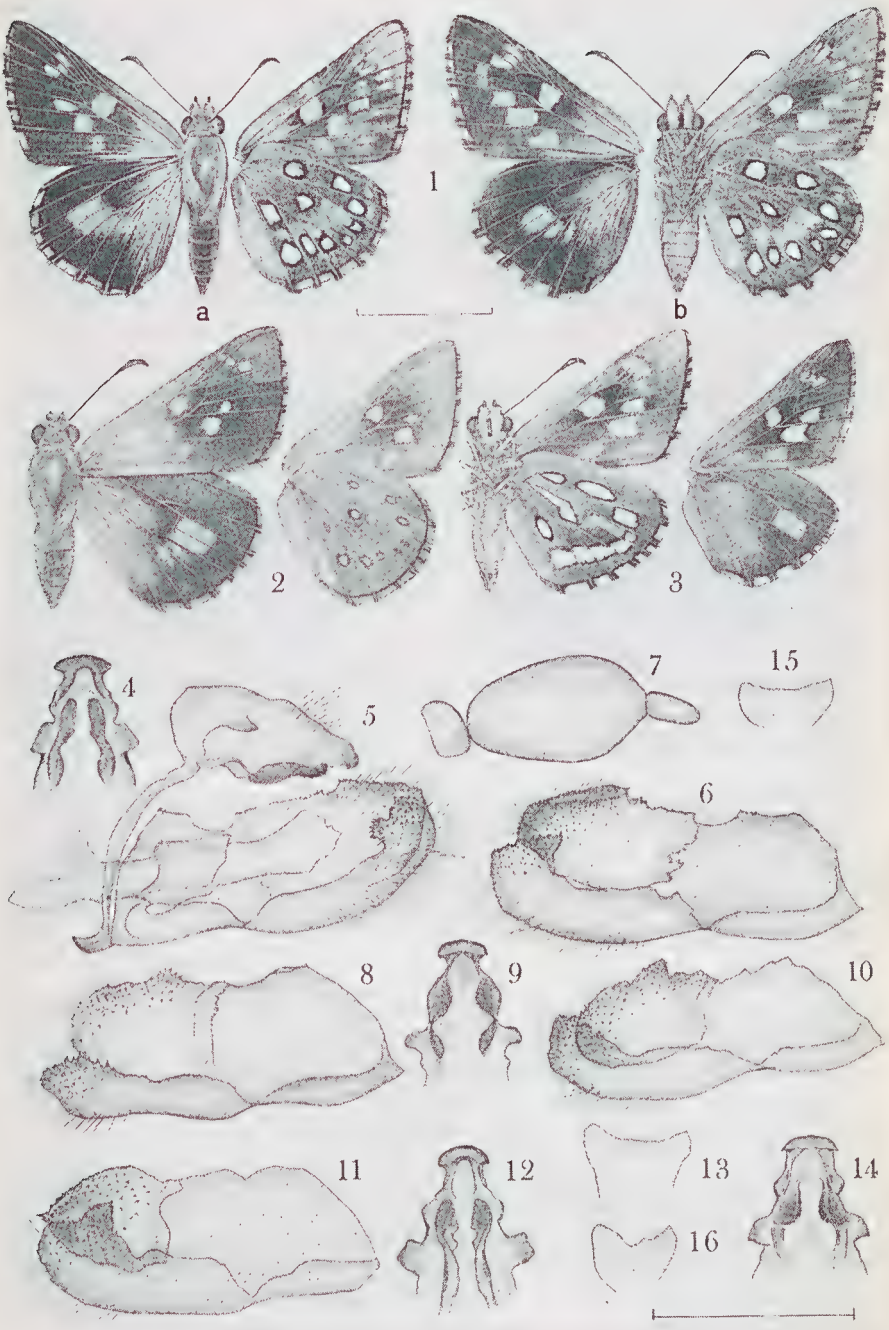
Dunn and Dunn (1991) have recently proposed the synonymy of *A. argenteoornatus argenteoornatus* and *A. argenteoornatus insula* (Waterhouse). However, at present we have retained the taxonomic arrangement of Waterhouse and Common (1981).

***Trapezites waterhousei* sp. n.**

Types. Western Australia: *Holotype* ♂, 13 km N Mt Jackson, active on laterite ridge, 21.ix.86, M. Powell, Reg. No. WAM 92/328, in WAM.

Paratypes: 14 km N Southern Cross, 31.ix.84, M. Powell (1♂ MP); 13 km N Mt Jackson, 21.ix.1986, M. Powell (1♂ AA, genitalia disected and slide mounted, 2♂♂ RM); 14 km N Southern Cross, 1.x.1984, M. Powell (1♂, 1♀ genitalia disected and slide mounted, RM); 14 km N Southern Cross, 2.x.1991, R. Hay (6♂♂ RM, 8♂♂ RH); 14 km N Southern Cross, 2.x.1991, R. Hay (1♀ RM, 1♀ RH); 14 km N of Southern Cross, 22.ix.1991, R. Hay (8♂♂, 1♀ RH); 14 km N Southern Cross, 23.ix.1991, R. Hay (5♂♂ RH); 14 km N Southern Cross, 16.ix.1991, R. Hay (7♂♂ RH); 14 km N Southern Cross, 18.x.1991, R. Hay (1♀ RH); 14 km N Southern Cross, 22.ix.1991, H. Bollam (2♂♂ HB); 14 km N Southern Cross, 2.x.1991, H. Bollam (2♂♂ CM, 3♂♂, 5♀♀ HB, 1♂ Jd'A); 14 km N Southern Cross, 3.x.1991, H. Bollam (2♂♂ GM, 1♂ Jd'A).

Figs. 1-16. Adults and genitalia of the Western Australian, South Australian and Victorian *Trapezites* spp. (1) *T. waterhousei*: (1a) ♂ upperside and underside; (1b) ♀ upperside and underside. (2) *T. sciron* (Warwick, WA), ♀ upperside, ♂ underside. (3) *T. argenteoornatus* (Shark Bay, WA), ♂ upperside, ♀ underside. (4-7), *T. waterhousei* (4) ventral view of uncus tip; (5) ♂ genitalia (including inside right valva); (6) inside right valva; (7) ♂ labial palpus. (8, 9), *T. s. sciron* (Warwick, WA), (8) inside left valva; (9) ventral view of uncus top. (10), inside left valva (Bunbury, WA). (11, 12), *T. s. eremicola* (Yanak, Vic.): (11) inside left valva; (12) ventral view of uncus; (13) lamella antevaginalis plate of *T. s. sciron* (Bunbury, WA). (14, 15), *T. a. argenteoornatus* (Bunbury, WA): (14) ventral view of uncus tip; (15) lamella antevaginalis plate; (16) lamella antevaginalis plate of *T. s. eremicola* (Yanak, Vic.). Scale bar = 10 mm (Figs. 1-3); 1 mm (Figs. 4-16).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Male (Figs. 1a, 4-7, 17, 18)

Antenna with club bent beyond half its length to a short, blunt apiculus, anterior convex surface orange, ventral surface yellow-brown; shaft black with white banding on ventral surface. Labial palpus (Fig. 7) with second segment broadly ovoid, third segment moderately long and narrow. Head covered with light brown to dark hairs, cream at base of antennae. Thorax and abdomen covered with dark brown hairs on dorsal surface, creamish brown on ventral surface, yellowish on shoulder and base of thorax; dorsal segments narrowly banded cream. Hind tibia with one pair of spurs. Fore wing length of holotype 14 mm, range of paratypes 12-15 mm, with origin of vein CuA_2 nearer to base than end of cell, CuA_1 and M_3 broadly spaced at origin; hind wing veins with base of CuA_2 and CuA_1 placed near end of cell and colonear, not bent up at CuA_1-M_3. Fore wing above mid brown with yellowish-orange hyaline markings, subapicals variable, three or four with second and fourth displaced, three median of variable intensity, one submedian adjacent to inner margin; hind wing above mid-brown with a medial yellowish-orange band, broken at veins and placed between M_1 and CuA_2; base of both wings with long yellowish-orange hairs, termen prominently chequered mid-brown and yellowish-white. Fore wing below mid-brown with bright yellow-orange markings, three median spots as on upperside, prominent subtornal streak from base extending to a little beyond mid point of costa, submedian adjacent to inner margin as in upperside; three to five subapical markings almost white and displaced as upperside, apical and subapical areas dusted with yellowish-grey scales; hind wing median and inner marginal areas dull yellow, other areas dusted with yellowish-grey scaling with white spots edged black, one basal, three submedian and five subterminal; chequering as in upperside.

Genitalia (Figs. 4-6). Tegumen broad with shallow lateral processes tapered towards a blunt curved uncus (Fig. 4): valvae asymetric with dorsal edge of tip broadly straight and toothed, ventral edge rounded with over-lapping harpe which in right valva (Fig. 5) is decurved, tpoothed and slightly divided and in left valva (Fig. 6) is less decurved, broadly square and toothed. Aedeagus long and broadly extended at distal end.

Female (Figs. 1b, 19, 20)

Antenna, labial palpus, hind tibia and wing venation as in amle. Both wings slightly broader and termen more rounded than male, ground colour above slightly duller, beneath with more extensive yellow-grey scaling; five subapical spots above and below, displaced as in male. Fore wing length 14 mm. Abdominal segments banded as in male.

Genitalia (Fig. 21). Papilla analis long, concave, sclerotised lobes with long distal setae; lamellae postvaginallis with long, narrow, angular 'Y'-shaped sterigma plates; lamella antevaginalis plate very broad and deeply 'U'-shaped, shallowly 'V'-shaped at distal edge; ductus bursae broad and long; corpus bursae elongate and oval, anteriorly constricted to a short tubular neck attached to a moderately large, spherical accessory pouch.

Figs. 17-20. *Trapezites waterhousei* sp. n. (17), ♂ upperside. (18), ♂ underside. (19), ♀ upperside. (20), ♀ underside.

Etymology. The species name honours the pioneering work carried out on Australian Hesperiidae by G.A. Waterhouse.

Variation

In both sexes there is considerable variation in size of all markings above and below the wings, particularly in the subapical, medial markings and those below the hind wings.

Discussion

T. argenteoornatus, *T. sciron* and *T. waterhousei* form a closely related group of skippers, despite superficial differences. Each species displays variation, which in *T. argenteoornatus* may be geographical. Variation in *T. sciron* is complex, with populations showing differences in the shape of the wing and in the size of the white spots on the underside of the hind wing. Some of these populations may not be conspecific as there also appears to be genitalic differences, particularly in the shape of the male valvae. More material is needed especially from the Stirling Range to access these variants.

The female genitalia of *T. waterhousei* differs from that of *T. sciron sciron* in having angular sterigma plates and a broad lamella antevaginalis plate, which is 'V'-shaped rather than shallowly concave and bifid. In *T. argenteoornatus* the lamella antevaginalis plate is broadly 'cup'-shaped.

Table 1. Comparison of morphological characters of *Trapezites sciron*, *T. argenteoornatus* and *T. waterhousei*.

	T. sciron (Perth)	*T. sciron* (SA, Vic)	*T. sciron* (Windy Harbour)	*T. argenteoornatus*	*T. waterhousei*
Antennal club	dull mid-brown	dull dark-brown	pale brown	pale orange-brown	orange
Labial palpus	narrow 2nd segment, medium rounded 3rd segment	narrow 2nd segment, medium rounded 3rd segment	narrow 2nd segment, short 3rd segment	narrow 2nd segment, medium pointed 3rd segment	broad 2nd segment, long narrow pointed 3rd segment
Hind tibial spurs	one pair	one pair	two pair	one-two pair	one pair
Underside hind wing maculation	small/variable white spots	small white spots	variable silver spots	large silver spots central spot long	large white-centred spots
Subapicals	three	three	three	three	three to five
Wing margins	not chequered	not chequered	variable	chequered	chequered
Fore wing shape	rounded	narrow	narrow	narrow, pointed	narrow, pointed
Tegumen process	narrow, straight and rounded	broad, anteriorly long	narrow tilted posteriorly	anteriorly broad and pointed	shallow, long
♂ left valva tip	straight, pointed	bent, forked	bent up slightly divided	almost straight to slightly bent	bent, squared
♀ lamella ante-vaginalis plate	shallow, bifid	narrow asymetric cup-shaped	broadly 'U'-shaped	broadly cup-shaped	broadly and deeply 'U'-shaped

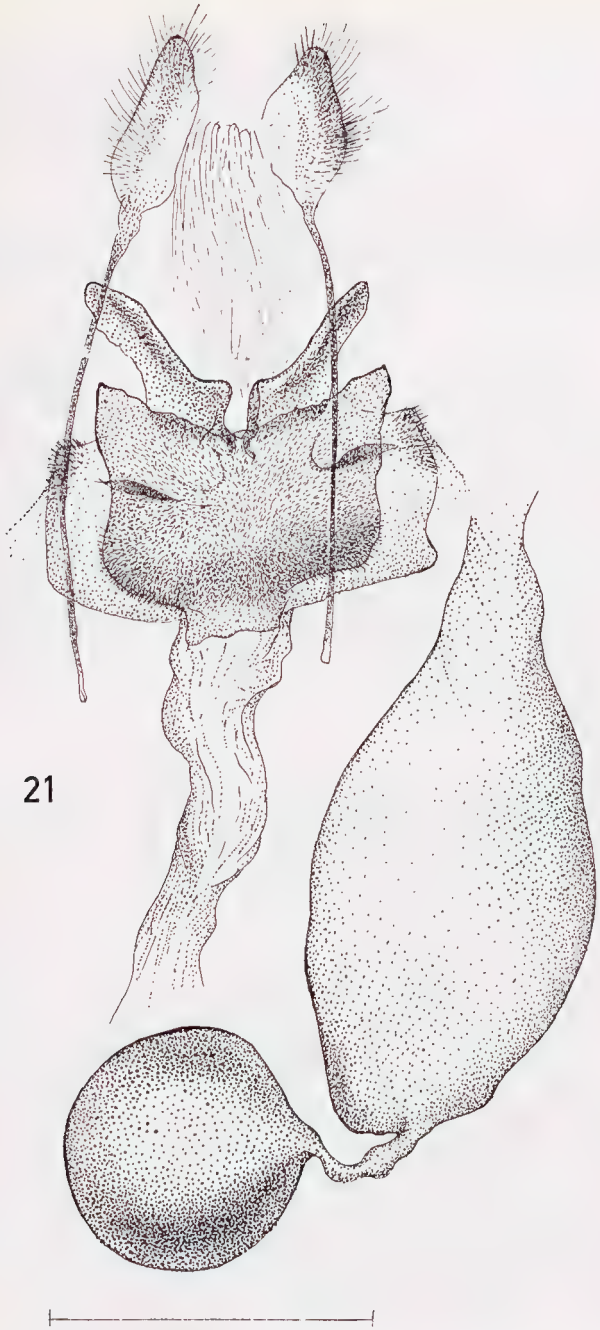

Fig. 21. *T. waterhousei* (14 km N Southern Cross, WA) ♀ genitalia. Scale bar = 0.5 mm.

It may be argued that the shared characters seen in the *argenteoornatus/sciron/waterhousei* complex, and their distinction from eastern Australian *Trapezites*, with long apiculus and brighter wing maculation, may warant the retention of *Anisyntoides* from Western Australian taxa. However, the only apparent structural criterion, that of antennal morphology, is variable, intermediate states being present in the eatsern Australian *T. luteus* (Tepper) and *T. phigalia*. Indeed, Evans (1949) refers to the variation of the form of antennal club and apiculus as "remarkable". Furthermore, the similarity of juveniles, supports the broader concept of a single genus, *Trapezites*.

Characters used to distinguish the described species of the Western Australian compex are shown in Table 1. Comparisons are also made with the eastern Australian subspecies of *T. sciron* and another curious entity from south-western Australia (Windy Harbour).

No information is currently available regarding the early stages of this skipper. The distriburions of *Lomandra* and *Acanthocarpus* (A.S. George 1986) suggest that they are not common plants at the known localites for *T. waterhousei*, although *L. collina* (R.Br.) Ewart may occur in the area. *Xerolirion divaricata* A.S. George, a plant closely related to these genera, grows on degaying granite and laterite rock outcrops north of Southern Cross. *X. divaricata* may prove to be the foodplant as all adults have been collected on laterite ridges.

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